Environmental Consultants

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SCS ENGINEERS

May 20, 1999 File No. 0185016.05

Mr. David R. Klunk Director of Environmental Protection City of Santa Fe Springs Headquarters Fire Station 11300 Greenstone Avenue Santa Fe Springs, California 90670-4619

Phone: (562) 944-9713 Fax: (562) 941-1817

SUBJECT:

Analytical Results for Aboveground Storage Tank Closure, Angeles Chemical Company, 8915 Sorensen Avenue, Santa Fe Springs,

California

Dear Mr. Klunk:

Per your letter dated March 29, 1999, to Mr. Jim Locke of Angeles Chemical Company (ACC), SCS Engineers (SCS) is submitting this letter-report presenting a summary of subsurface soil sampling activities and analytical results with respect to aboveground storage tank (AST) closure at the subject site (Figure 1). A workplan dated March 23,1999, was submitted to the Santa Fe Springs Fire Department (SFSFD) by EREMCO and subsequently approved.

On April 15, 1999, SCS performed subsurface soil sampling activities on the southwestern portion of the site where four former ASTs were located (Figure 2). A SFSFD Environmental Protection Inspector, Mr. Raul Diaz, was on site to observe soil sampling activities.

Subsurface soil samples were obtained from selected depths using a Geoprobe® direct-push rig provided by Global Probe, Inc. The Geoprobe® rig was equipped with a hydraulic hammer and a two-foot long, 1.5-inch diameter solid-spoon sampler. A pointed steel tip was fixed to the head of the solid-spoon sampler and driven to the desired depth on a steel rod. Samples were collected by retracting the drive tip through the center of the sampler with an inner rod, and hydraulically hammering the sampler an additional two feet.

Soil samples from each of the borings were recovered in 6-inch long, 1.25-inch diameter pre-cleaned brass sleeves which were placed inside the two-foot sampler. For each sample depth at all locations two 6-inch brass were removed from the bottom of the sampler and retained for subsequent laboratory analysis.

Immediately following soil sample collection, both ends of one sample sleeve were covered with a Teflon sheet and capped with plastic end caps. A label noting the date of collection, sample number, and project number was affixed to each sample. Immediately following labeling, samples were placed in a chilled cooler for subsequent transport to the Advance Technology Laboratory (ATL), state-certified laboratory located in Signal Hill, California. Samples were tracked from the point of collection to the laboratory using standard chain-of-custody protocol.

Soil samples were collected at depths of 5 and 10 feet below ground surface (bgs) from each of the four borings (T-1, T-2, T-3, and T-4), located beneath the center of the former ASTs (Figure 2). A total of eight soil samples were submitted to the laboratory for analysis. Soil samples were analyzed for total petroleum hydrocarbons (TPH) by EPA Method 8015 Modified (gasoline and diesel), aromatic volatile hydrocarbons and other volatile organic compounds (VOCs) by EPA Method 8260.

Analytical results indicated no detectable concentrations of TPH in any of the eight samples. The VOCs listed in Table 1 were detected in concentrations ranging from 5.9 to 386 μ g/kg. Table 1 presents a summary of VOC analytical results. Laboratory reports and chain-of-custody documents are attached.

Table 1: VOC Analytical Results (EPA Method 8260)

	STORE COMME		Sample	Number and	Depth	A TOTAL OF THE RESERVE OF THE RESERV		
Analyte (µg/kg)	T-1@5'	T-1@10'.	T-2@5'	T-2@10'	T-3@5'	T-3@10'	T-4@5'	T-4@10'
1,1-DCA	18.	7.8	23	5.9	11	< 5.0	9.7	< 5.0
cis-1,2-DCE	386	98	329	101	182	16	119	10
Ethylbenzene	10	< 5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
PCE	48	7.4	30	7.2	69	< 5.0	221	< 5.0
Toluene	< 5.0	< 5.0	< 5.0	< 5.0	9.3	< 5.0	<5.0	<5.0
√ TCE	61	17	54	23	206	6.8	272	6.9
1,2,4-TMB	89	7.2	18	< 5.0	7.4	< 5.0	< 5.0	< 5.0
1,3,5-TMB	44	< 5.0	13	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
√Xylenes (Total)	58	9.9	16	< 5.0	7.7	<5.0	<5.0	<5.0

Notes: $\mu g/kg = \text{micrograms per kilogram; approximately equivalent to parts per billion (ppb).}$

"<" indicates sample concentration was below indicated detection limits

Compounds not listed were all below laboratory detection limits.

1,1-DCA = 1,1-Dichloroethane

TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

1,2,4-TMB = 1,2,4-Trimethylbenzene

PCE = Tetrachloroethene

1,3,5-TMB = 1,3,5-Trimethylbenzene

As SFSFD is aware, the subject site is currently under the jurisdiction of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). Extensive site investigation has been conducted. A removal action workplan has been approved by DTSC requiring vapor, extraction, which will remediate impacted soil in the area of the former ASTs. On behalf of ACC, SCS is requesting closure for these four former ASTs from SFSFD, with the knowledge that remediation of this area will be implemented under the oversight of DTSC. The case officer for DTSC is Mr. Shawn Haddad who can be reached at (818) 551-2962.

Please contact one of the undersigned if you have any questions.

Sincerely,

Darren R. Ness Staff Scientist

Brian A. Watterson, R.G., R.E.A.

Project Manager SCS ENGINEERS

Attachments

cc: Mr. Jim Locke, Angeles Chemical Company

Mr. Shawn Haddad, DTSC Region III

Mr. Raul Diaz, SFSFD

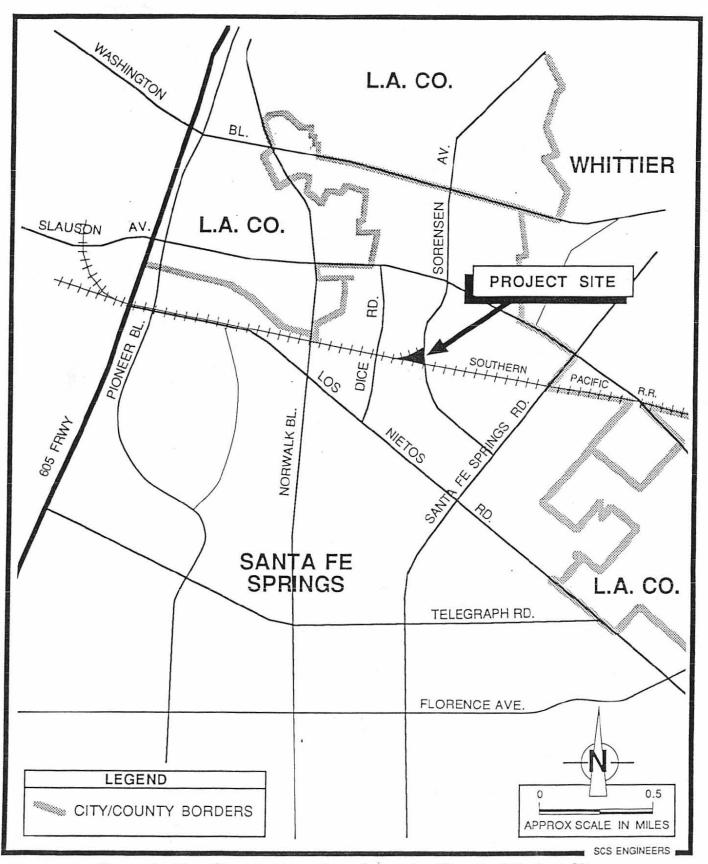
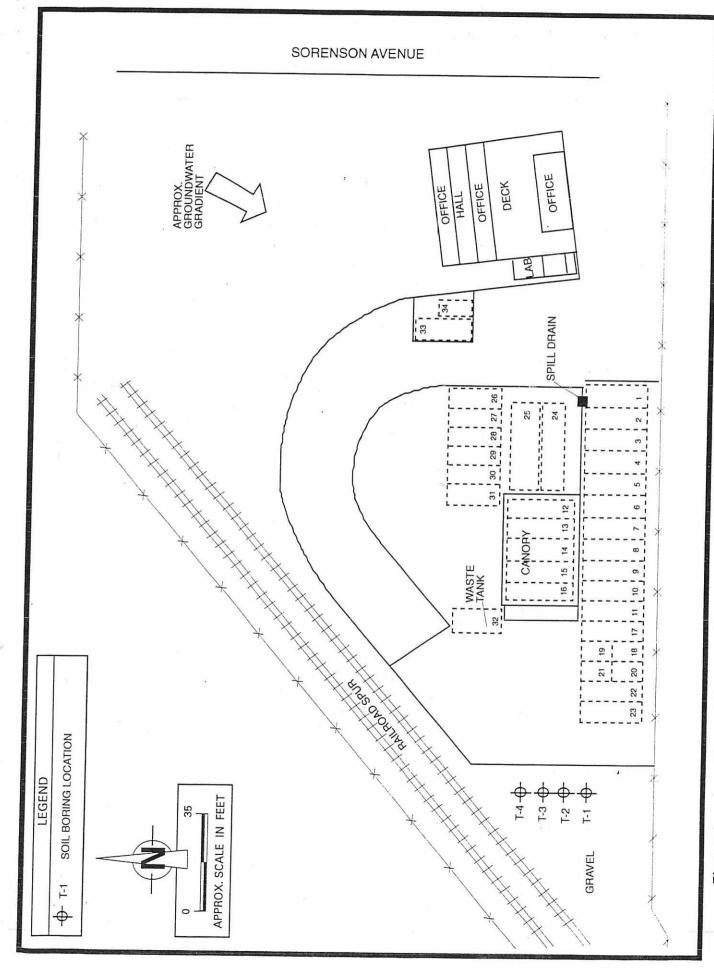


Figure 1. Map Showing Location of Angeles Chemical Project Site.



Locations of Former Aboveground Storage Tanks, Angeles Chemical Site, Santa Fe Springs, CA. Figure 2.

April 28, 1999

ELAP No.: 1838

SCS Engineers 3711 Long Beach Blvd. 9th Floor Long Beach, CA 90807

ATTN:

Brian Watterson

Client's Project:

Angeles, 0185016.05

Lab No.:

34959-001/016

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Cheryl De Los Reyes

Technical Operations Manager

CDR/jh

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

SCS Engineers

Attn:

Brian Watterson

Client's Project: Date Received: Angeles, 0185016.05

Matrix:

04/15/99 Soil

Units:

μg/kg

EPA Method 8260

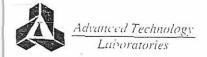
Lab N	0.:	Metho	d Blank	34959-	001	34959-0	003	34959-	005	34959-007		
Client Sample L.	D.:	_		T-1@5	•	T-1@1	0'	T-2@5	•	T-2(a)10'		
Date Sample	ed:	-		04/15/9	9	04/15/9	9	04/15/9	9	04/15/9	9	
QC Batch	#:	P99VO	CS067	P99VO	CS067	P99VO	CS067	P99VC	CS067	P99VO	CS067	
Date Analyz	ed:	04/16/9	9	04/16/9	9	04/16/9	9	04/16/9		04/16/9	04/16/99	
Analyst Initi	als:	SMC				SMC		SMC		SMC		
Dilution Fact	or:	1		1		1		1		1		
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	
Benzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Bromobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Bromodichloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Bromoform	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Bromomethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
n-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
sec-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
tert-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Carbon tetrachloride	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Chlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Chloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Chloroform	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Chloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
2-Chlorotoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
4-Chlorotoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Dibromochloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,2-Dibromo-3-chloropropan	10	10	ND	10	ND	10	ND	10	ND	10	ND	
1,2-Dibromoethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Dibromomethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,2-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,3-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,4-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Dichlorodifluoromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1-Dichloroethane	5.0	5.0	ND	5.0	18	5.0	7.8	5.0	23	5.0	5.9	
1,2-Dichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1-Dichloroethene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
cis-1,2-Dichloroethene	5.0	5.0	ND	5.0	386	5.0	98	5.0	329	5.0	101	

MDL = Method Detection Limit

ND = Not Detected (Below DLR).

DLR = MDL X Dilution Factor

NA = Not Analyzed



SCS Engineers

Attn:

Brian Watterson

Client's Project:

Angeles, 0185016.05

Date Received:

04/15/99

Matrix: Units:

Soil µg/kg

EPA Method 8260

Lab No.:		Method	Blank	34959-	001	34959-0	003	34959-	005	34959-0	007
Client Sample I.D.:		_		T-1@5	1	T-1@10		T-2@5	and the same of th	T-2@1	-
ANALYTE		DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Result
trans-1,2-Dichloroethene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
1,2-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
1,3-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
2,2-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	
1,1-Dichloropropene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
Ethylbenzene	5.0	5.0	ND	5.0	10	5.0	ND	5.0	ND	5.0	NI
Hexachlorobutadiene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
Isopropylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	NI
p-Isopropyltoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Methylene Chloride	15	15	ND	15	ND	15	ND	15	ND	15	ND
Methyl tert-Butyl Ether	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Naphthalene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
n-Propylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Styrene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
1,1,1,2-Tetrachloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
,1,2,2-Tetrachloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Tetrachloroethene	5.0	5.0	ND	5.0	48	5.0	7.4	5.0	30		ND
Toluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	7.2
,2,3-Trichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		ND
,2,4-Trichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
,1,1-Trichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		ND
,1,2-Trichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0		5.0	ND
richloroethene	5.0	5.0	ND	5.0	61	5.0	17	5.0	ND 54		ND
richlorofluoromethane	5.0	5.0	ND	5.0	ND	5.0	ND ND	5.0		5.0	23
,2,3-Trichloropropane	10	10	ND	10	ND	10	ND	227101	ND	5.0	ND
2,4-Trimethylbenzene	5.0	5.0	ND	5.0	89	5.0	7.2	5.0	ND	10	ND
3,5-Trimethylbenzene	5.0	5.0	ND	5.0	44	5.0	ND ND	5.0	18	5.0	ND
inyl Chloride	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	13	5.0	ND
ylenes (Total)	5.0	5.0	ND	5.0	58	5.0	9.9	5.0	ND 16	5.0	ND ND

MDL = Method Detection Limit

ND = Not Detected (Below DLR).

DLR = MDL X Dilution Factor

NA = Not Analyzed

Reviewed/Approved By:

Val Mallari

Department Supervisor

The cover letter is an integral part of this analytical report.

Date _ 1/20 /200

Page 2 of 2

SCS Engineers

Attn:

Brian Watterson

Client's Project: Date Received: Angeles, 0185016.05 04/15/99

Matrix:

Soil

Units:

μg/kg

EPA Method 8260

Lab No	0.:	34959-0	009	34959-	011	34959-	013	34959-	015		
Client Sample I.1	D.:	T-3@5	ľ.	T-3@1	0'	T-4@5	ľ	T-4@1	0'	W	
Date Sample	ed:	04/15/9	9	04/15/9	19	04/15/9	9	04/15/9	19		
QC Batch	#:	P99VO	CS067	P99V0	CS067	P99VO	CS067	P99VO	CS067		
Date Analyz	ed:	04/16/9	9	04/16/9	9	04/16/9	9	04/16/9	19		
Analyst Initi	als:	SMC		SMC		SMC		SMC			
Dilution Fact		1		1		1		1			
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results		
Benzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Bromobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Bromodichloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Bromoform	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Bromomethane	5.0	5.0	ND	5.0	ND	5.0	ND		ND		
n-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
sec-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
tert-Butylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Carbon tetrachloride	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Chlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Chloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Chloroform	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Chloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
2-Chlorotoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
4-Chlorotoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Dibromochloromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
1,2-Dibromo-3-chloropropan	10	10	ND	. 10	ND	10	ND	10	ND		
1,2-Dibromoethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Dibromomethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
,2-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
,3-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
,4-Dichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
Dichlorodifluoromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
,1-Dichloroethane	5.0	5.0	11	5.0	ND	5.0	9.7	5.0	ND		
,2-Dichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
,1-Dichloroethene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND		
cis-1,2-Dichloroethene	5.0	5.0	182	5.0	16	5.0	119	5.0	10		

MDL = Method Detection Limit

ND = Not Detected (Below DLR).

DLR = MDL X Dilution Factor

NA = Not Analyzed



SCS Engineers

Attn:

Brian Watterson

Client's Project: Date Received:

Angeles, 0185016.05

Matrix:

04/15/99 Soil

Units:

μg/kg

EPA Method 8260

Lab No.:		34959-0	009	34959-0	011	34959-0)13	34959-	015	
Client Sample I.D.:		T-3@5		T-3@1	0'	T-4@5		T-4@1	0'	
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	
trans-1,2-Dichloroethene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,2-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,3-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
2,2-Dichloropropane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1-Dichloropropene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Ethylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Hexachlorobutadiene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Isopropylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
p-Isopropyltoluene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Methylene Chloride	15	15	ND	15	ND	15	ND	15	ND	
Methyl tert-Butyl Ether	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Naphthalene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
n-Propylbenzene	5.0	5.0	ND	5.0	- ND	5.0	ND	5.0	ND	
Styrene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1,1,2-Tetrachloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1,2,2-Tetrachloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Tetrachloroethene	5.0	5.0	69	5.0	ND	5.0	221	5.0	ND	
Toluene	5.0	5.0	9.3	5.0	ND	5.0	ND	5.0	ND	
1,2,3-Trichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,2,4-Trichlorobenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1,1-Trichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,1,2-Trichloroethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Trichloroethene	5.0	5.0	206	5.0	6.8	5.0	272	5.0	6.9	
Trichlorofluoromethane	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
1,2,3-Trichloropropane	10	10	ND	10	ND	10	ND	10	ND	
1,2,4-Trimethylbenzene	5.0	5.0	7.4	5.0	ND	5.0	ND	5.0	ND	
1,3,5-Trimethylbenzene	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Vinyl Chloride	5.0	5.0	ND	5.0	ND	5.0	ND	5.0	ND	
Xylenes (Total)	5.0	5.0	7.7	5.0	ND	5.0	ND	5.0	ND	

MDL = Method Detection Limit ND = Not Detected (Below DLR).

DLR = MDL X Dilution Factor

NA = Not Analyzed

Reviewed/Approved By:

Department Supervisor

Spike Recov and RPD Summary Report (pil(ug/Kg)

Method : C:\HPCHEM\1\METHODS\PVS0331.M (RTE Integrator)
Title : VOC 8240/8260B Advanced Technology Laboratory
Last Update : Thu Apr 15 09:17:46 1999

Response via : Initial Calibration

Non-Spiked Sample: 34959-01.D

Spike Spike

Sample Duplicate Sample

PMD0416A.D

File ID : PMS0416A.D Sample : 34959-01 spike 34959-01 spike dup Acq Time: 16 Apr 1999 3:24 pm 16 Apr 1999 3:51 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC RPD	Limits % Rec
1,1-dichloroethene	0.0	100	98	99	98	99	0	20	58-156
benzene	0.0	100	102	96	102	96	6	12	72-134
trichloroethene	61.3	100.	162	142	101	81	22#	16	55-145
toluene	0.0	100	104	94	100	90	11	16	73-127
chlorobenzene	0.0	100	103	95	103	95	9	11	80-119

OCBATCH#P99VOCS067

= Otside limits due to matrix interference.

Reviewed/Approved By

Edgar Morrison

Volatile Section Supervisor

Fax: 562 989-4040

SCS Engineers

इम/इम ट

0.8

Brian Watterson

Client's Project:

Client:

Xylenes (total)

Matr

:Xin	lios
: Beceived:	66/\$1/10
t's Project:	Angeles, 0185016.05

αN	0.2	ND	0.2	an	0.2	αN	0.2	αN	0.8	an	0.2	an	0.2	αN	0.2	an	0.8	ਰੋਮ੍/ਰੋਜ	S	Ethylpenzene
αN	0.2	an	0.2	an	0.2	αN	0.2	αN	0.8	đΝ	0.2	αN	0.2	αN	0.2	ΠN	0.8	हिम्/हित	S	Toluene
an	0.8	αN	0.2	ΠN	0.2	an	0.2	an	0.2	an	0.2	an	0.2	an	0.2	aN	0.8	ਡੇਮ੍/ਡੇਜ	S	Веплене
an	0.1	αN	0.1	αN	0.1	αN	0.1	αN	0.1	an	0.1	ΠN	0.1	an	0.1	an	0.1	By/Bu	1	LbII (Guz)
Kesuits	яна	Results	ala	etluasA	H IG	siluasii	ana	Results	HIG	Mesulta	HIG	Results	BLR	sijnsayj	ana	Results	Alu	Lines	Tala	Stylen7.
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66	97/52	66,	04/52/	66	197/40	60	5/57/70	60	6/57/0	6	6/57/10	6	6/57/10) (6/57/10		66/47/40	sj\zeq:	Date An	
221202	3866I	771807	D8661	771807	D8661	771507	1998GZ	77150	1998G2	77IS0	75866I	77180	79866	77150	758661	77150	1998G20	atch #:	OC B	
66	SI/#0	66.	151/10	66	/SI/t0	60	5/51/10	6	6/51/00	6	6/51/10	6	6/\$1/10) (66/\$1/\$0			:pəjdu	Date Sar	
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0.2

ND

0.2 UN

11)1, = Alethod Detection	յրայ լա					(2		BLR = MDI	ua x r	thon Factor										
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(Intot) sonoly/	9	विभ्/वित																		
Ethylbenzene	S	ਰੋਮ/ਡੋਜ		4				-												
Loluene	9	न्नि/द्वा																		, , , , , , , , , , , , , , , , , , ,
зиогиог	9	ਰੋਮ੍ਰ/ਰੋਜ																		
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		:oN dr																		

aN

0.8 dN

0.2 UN

0.2 QN

O'S AN

0.8 QN

pazdeny 10N = NN

Val Mallari, Department Supervisor

Reviewed/Approved By:

ND = Not Detected. (Below DLR)

Spike Recog and RPD Summary Report OIL

Method : C:\HPCHEM\1\METHODS\IS990423.M (RTE Integrator)
Title : M8015GAS(Calibrated on 3/15/99) / 8020(BTEX)
Last Update : Fri Apr 23 18:12:55 1999

Response via : Initial Calibration

Non-Spiked Sample: 35129-02.D

Spike Sample

Spike

Duplicate Sample

File ID : IMS0424A.D

IMD0424A.D

Sample : i998g20s122/
Acq Time: 25 Apr 1999 5:09 am

i998g20s122/ 25 Apr 1999 5:33 am

Compound	Sample Conc	Spike Added		-	Spike %Rec	Dup %Rec	RPD		Limits % Rec
Gasoline (mg/kg) Benzene #2(ug/kg) Toluene #2 (ug/kg)		3 12 156	15	3 14 185	127	104 119 119	6 2	15	41-151 42-132 42-132

QC BATCH #: I998G20S122

Reviewed and Approved by:

Date 122 43

Edgar Morrison, Volatile Group Leader

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-001

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Angeles, 0185016.05

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-1@51

Analyst Initials:

Client's Project:

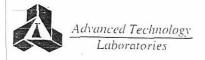
JW

Ну	drocarbon Chain Distribut	ion	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td>1.0</td></c10<>	ND	ND	1.0
C10 - C12	ND	ND	10
C13 - C15	ND	ND	10
C16 - C22	ND	ND	10
C23 - C32	ND	ND	10
>C32	ND	ND	10
		+	
9			

ND = Not Detected.

Reviewed/Approved By:	M. A. W.	Date:	4 harlin	
	Lee Ingvaldson			

Department Supervisor



Client: S

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-003

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-1@10'

Angeles, 0185016.05

Analyst Initials:

Client's Project:

JW

Нус	rocarbon Chain Distributi	0 1	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td></td></c10<>	ND	ND	
C10 - C12	ND	ND	
C13 - C15	ND	ND	
C16 - C22	ND	ND	
C23 - C32	ND	ND	
>C32	ND	ND	
			n 8

ND = Not Detected.

Reviewed/Approved	Rv.
recticited/Approved	Dy.

Lee Ingvaldson

Department Supervisor

Date: 4/26/66

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-005

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Date Extracted: 04/17/99

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Angeles, 0185016.05

Sample ID.:

T-2@51

Analyst Initials:

Client's Project:

JW

Ну	drocarbon Chain Distribut	OT1	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td></td></c10<>	ND	ND	
C10 - C12	ND	ND	
C13 - C15	ND	ND	
C16 - C22	ND	ND	
C23 - C32	ND	ND	
>C32	ND	ND	
е п		<u> </u>	
			<u> </u>

ND = Not Detected.

Reviewed/Approved	By:	i	

Lee Ingvaldson

Department Supervisor

Date: 1/20/99

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-007

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Angeles, 0185016.05

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-2@10'

Analyst Initials:

Client's Project:

JW

Нуг	Irocarbon Chain Distribut	ion	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND -</td><td>ND</td><td>1.0</td></c10<>	ND -	ND	1.0
C10 - C12	ND	ND	10
C13 - C15	ND	ND	10
C16 - C22	ND	ND	10
C23 - C32	ND	ND	10
> C32	ND	ND	10
î .			

ND = Not Detected.

Reviewed/Approved By:

Lee Ingvaldson

Department Supervisor

Date: 1/201/49

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-009

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Client's Project:

Angeles, 0185016.05

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-3@5'

Analyst Initials:

JW

Нус	frocarbon Chain Distributi	on	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND ND</td><td>ND</td><td>1.</td></c10<>	ND ND	ND	1.
C10 - C12	ND	ND	1
C13 - C15	ŅD	ND	1
C16 - C22	ND	ND	1
C23 - C32	ND	ND	1
>C32	ND	ND	1
	(4)		

ND = Not Detected.

Reviewed/Approved By:

Lee Ingvaldson

Department Supervisor

Date: VEG/CS

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-011

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Date Extracted: (

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-3@10'

Angeles, 0185016.05

Analyst Initials:

Client's Project:

JW

Нус	brocarbon Chain Distributi	on.	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td>1.0</td></c10<>	ND	ND	1.0
C10 - C12	ND	ND	10
C13 - C15	ND	ND	10
C16 - C22	ND	ND	10
C23 - C32	ND	ND	10
>C32	ND	ND	10
	A.		
			1

ND = Not Detected.

Reviewed/Approved By:	Wilkel	Date: 1/26/90
	Lee Ingvaldson	

Department Supervisor

SCS Engineers

Attn:

Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-013

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Angeles, 0185016.05

Date Analyzed: 04/27/99

Dilution Factor: 1

Matrix:

Soil

Sample ID.:

T-4@51

Analyst Initials:

Client's Project:

· JW

Нус	drocarbon Chain Distributio	n.	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td>1.0</td></c10<>	ND	ND	1.0
C10 - C12	ND	ND	10
C13 - C15	ŅD	ND	10
C16 - C22	ND	ND	10
C23 - C32	ND	ND	10
> C32	ND	ND	10
4			

ND = Not Detected.

D .					*
KAVI	ewed/	An	nrox	har	Rv.
TOLI	CHICUI	LAN	DIVI	Cu	DY.

Lee Ingvaldson

Department Supervisor

Date:

Client: SCS Engineers

Attn: Brian Watterson

QC Batch #: L998015DS193

Lab No.: 34959-015

Date Sampled: 04/15/99

Date Received: 04/15/99

Date Extracted: 04/17/99

Date Analyzed: 04/27/99

Dilution Factor: 1

Client's Project:

Angeles, 0185016.05

Matrix:

Soil

Sample ID.:

T-4@10'

Analyst Initials:

JW

Hyd	rocarbon Chain Distribut	ion	
Hydrocarbon I.D.	% Weight	Results, mg/kg	Detection Limit, mg/kg
<c10< td=""><td>ND</td><td>ND</td><td>1.</td></c10<>	ND	ND	1.
C10 - C12	ND	ND	1
C13 - C15	ND	ND	1
C16 - C22	ND	ND	1
C23 - C32	ND	ND	10
>C32	ND	ND	10
17			

ND = Not Detected.

Reviewed/Approved By:	1/11/lail.	Date:
•	Lee Ingvaldson	

Department Supervisor

Spike Reco rv and RPD Summary Report OIL (mg/kg)

Method : C:\HPCHEh.\2\METHODS\DIESEL8.M (Chemstation Integrator)
Title : Advanced Technology Laboratories (DIESEL)

Last Update : Mon Apr 19 15:54:27 1999

Response via : Initial Calibration

Non-Spiked Sample: 34959-01.D

Spike

Spike

Sample

Duplicate Sample

File ID : LMS0427C.D

Sample : L998015DS193 34959-01 MS DSL

LMD0427C.D

L998015DS193 34959-01 MSD DSL

Acq Time: 27 Apr 1999 11:25 pm

27 Apr 1999 11:54 pm

Compound

Sample Spike Spike Dup Spike Dup RPD QC Limits Conc Added Res Res %Rec %Rec RPD % Rec

107.8 | 1000 | 1034 | 978 | 93 | 87 | 6 | 23 | 40-140

OC Batch#: L998015DS193

Reviewed and Approved by:

Lee Inqualdson

Date: 4/2.169

Organics Supervisor

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						FOR LABORATORY USE ONLY:																		
Advanced Technology Laboratories Batch #:					D.O. #					Method of Transport Walk-in Courier □					IILLED			Condition N ☐ 4.		A O MQ				
	510 E. 33rd Street						-	UPS 🗆					-2. HEADSPACE (VOA) Y□ N□ 5. # OF SPLS MATI							IATCH	COC YT N []			
(5	gnal Hill, CA 90807 62) 989-4045 • FAX (.		Logged By:)	Date:	LIG MICO FED. EXP. ロ											T Y NO 6. PRESERVED YON'T							
	ent: <u>505 ENGU</u>				Addres	ddress: 3711 LONG BEACH BUD. 9th FLOOR									,			- 7544						
Attr	EFION WAT	7FRSON		_		ax						tate (18/1	18 000			3080	0807 FAX:(562)427-030						
Proj	ect Name: AUGC	CES	Project #:	018.5	016.	05	S	ample	r: r	(Printed	Name)	٠,٨	11-5	<u> </u>	*		(Signa		1/1			~		
Relin	quished by: (Signature and Printed		.1			Sampler: (Printed Name) Signature) Signature Signature Date: U. Time:														Time: 17/11				
	equished by: (Signature and Printed	d Name)		le:		Time: Received by: (Signature and Printed Name)												Date: Time:						
Relin	quished by: (Signature and Printed	d Name)	Dat	le:	7	ime:		Rece	eived b	y: (Signa	ature and P	rinted Na	me)						Date):			Time:	
	P TO LAB:	I hereby authorize ATI Project Mgr /Sub	L to perform the work indication	ated below:		0	Report T						ja stankartina - 20 G	al Instru			7.5	, ,	AST	<u>с</u> .				
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CLIEN	VT I.D	0	Signature	40 		Address														- 1				
	Unless otherwise	Sample Archive/Disp	oosal:		Analysis(ps) / O/ 2: / / Ata / / E/ / / / / /														QA/QC					
	quested, all samples	Other					Bequested 6/8/ / K										75/5	MATRIX					MINE [
Wiii	be disposed 45 days after receipt.	☐ Return To:													18/9/9	3/~/ / / /						RWQCB WIP		
		* \$10.00 FEE PEP	R HAZARDOUS SAMPI	LE DISPO									100 00 00 00 00 00 00 00 00 00 00 00 00						///	1	В >	NAVY		
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	004	T-1 8 10.5	"- ARCHIVE	1/25/:5	DED																1		AFCHIVE	
_	005	T-29 5'	<u> </u>	7,5Kx	0555			X	X	X									T	1	+ 11	-	1	
	<u> </u>	T-2. 2 5.	5' - ARCHIVE	4/15/49	0555									m_ce.									APCHIVE	
	£02	F20.10	i.	9/15/4/5	1703			X	X	X									E	1 +	1 11	-		
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		t-30 5	-/	cy. str	0,08			X	X	X									E	1-	T 1	-	ı	
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Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal Z=Zn(AC), O=NaOH T=Na,S,C																								

4 %.		_ CH	FOR LABORATORY LOS ON Y																			
		100000000000000000000000000000000000000						FO	OR LA	ABORA	ATOR	RY USE	E ONL'	Y:				-	-	19.	-	01
	d Technology	Batch #:		D.O. #					Meth	nod of	Trans	sport				Samp	ple Cond	lition Ur				
	boratories			U.U. #	A					alk-in ourier	, X		1. CH	HILLED			KE NE			75		YDW
1510 E. 33rd Street Signal Hill, CA 90807	•	P.O.#:					#1 ⁻		UP				2 HE	**DCD*	OF 440							
(562) 989-4045 • FAX	(562) 989-4040	Logged By:		_ Date:	4.10	5 -	ihul	n	FE	D. EXP									COC YUNI			
Client: 505 FM616		Logged Dy.					ne: 124	-	ATI			4	3. CO	NTAINE	ER INTA	CT Y	W NE] 6. P	Y 🗆 Na			
Attn: BRIAN W	ATERS	a Direct		Addre	ddress: 3711 LONG BEACH BLVD, GHH FLOOK TEL															-9544		
Project Name: A	MITTER	Designati		City	100	10 1	CENC	H			State	CA			Code 7	2080	7.7 F	AX:(2	767	1 4	260	- 6805
Project Name: Al-Acc	LES	Project #	: 0185	TP/6.	05		Sampl	er: -	(Printer)	ed Name	1)	Alta		7		(Signatur		FU. ().	E3 4	1 .7		- 0800
Relinquished by: (Signature and Print		P. Mess Da	ate: 11/15	-199	Time:	115	T, Re	ceived	by: (Sig	anature pho	d Aring of h	Valme)	Tho	1.10	7 10			Data	1	- 7.	я.	
Relinquished by: (Signature and Print		Da	ate:		Time:		Re	ceived	by: (Sig	nature and	d Printed N	Name)	MEK	LUU	UVI			Date:	1.10	2.40	-	Time: ZU
Relinquished by: (Signature and Print	ted Name)	Da	ate :		Time: Received by: (Signature and Printed Name)												To the second	No.	-		Time:	
SHIP TO LAB: (SUB CONTRACT)	I hereby authorize A	ATL to perform the work indic	ated below	r:	Send	d Report							al Instruc	ctions/C	commer.	nte:		Date:			1	Time:
TEST:	Project Mgr /Su		-24	92856	Attn:												-11-6-	0				
ATL #:	DESCRIENT Print N	Date	04/11	5,89	189 co: 801517-TO AT LEAST Cyo																	
DATE: CLIENT I.D	1 7	Name P. The	Colin		Addre	ess																
	U	Signature	2		200.000.000	313000		Sta		Zin												
Unless otherwise	Sample Archive/Disp	posal:			Circle	or Add	1/1	6/	7/	Zip	77	77	77		77							- 18
requested, all samples	∠ Laboratory Stan □ Other	ndard		1	Analy	/sis(es) uested /		3//	1/6	412/	3/	///	//	//	//	CIF	IRCLE AP	PROPR TRIX	HATE		7	QA/QC
will be disposed 45 days	☐ Return To:				Tioqu	esicu/	10 Z/2/	8/3	/\\\·\.	1/2/	//	18/	//	//	14/5	5/8/	7//	///	7		0 0	RTNE RWQCB
after receipt.		R HAZARDOUS SAMPL	I E DISPO	2541	1	100/	Jan S	1/5/	5/5	13/3	3//	10/	//	1/3	3/3/	12/0	//	//			ATI	WIP
LAB USE ONLY:			DUS SAMPLE DISPOSAL. Sescription Date Time Sample										1/4/W	/ / / / >					NAVY			
Batch #:		Sample Description			1/2	2/00/	20/20/	Sallie S	1 2 / S	A A A	100	1/	1/1	KE/E	Z/Z/	0/2/		CT [
M Lab No.	Sar	ımple I.D.	Date	Time	108/180/				18 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	47.01 V	1.5/6/	//,	1/3		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Z Z Z		-	ontain	-	8	OTHER
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TAT starts 8 a.m. following	Emerge Next w	ency	C	C= Cri	ritical Workda		D	_ Urç	gent Workda		E=	Routi	ne	++	Preser		P6.			- 10 (C) - 10 (C) (C)		
samples received after 5 p.	.m. Contai	$A = \begin{bmatrix} Overnight \\ \le 24 \text{ hr} \end{bmatrix} B = $ $\text{iner Types: } T = Tube$					vvorkda nt J=J	The second second		- 3 W	Vorkd				ine irkdays		H=Hcl	N=F	-INO3	3 S=	=H ₂ S	SO4 C=4°C
					1101	/ -/ 11/	1 0-0	idi i	3=16	diar	G=G	lass	P=Plas	stic '	$M=M\epsilon$	etal	Z=Zn(AC) ₂	O='	NaOI	Η .	T=Na ₂ S ₂ O ₂